7 ~~45.~~ (Amended) A method for assaying a ligand for a heptahelix receptor, said method comprising:

providing a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9;

E1

incubating the receptor with a test sample suspected of containing the ligand; and

detecting binding between the receptor and the ligand,

wherein binding indicates that a ligand for the receptor is present in the sample.

8 ~~48.~~ (Amended) The method of claim ~~45~~ 7, wherein the heptahelix receptor is expressed on a cellular membrane of a host cell transfected or transduced with DNA encoding the receptor.

E2

Please add new claims 50-54 as follows:

50. (New) A method for assaying for an antagonist or agonist for a ligand that binds to a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9, said method comprising:

E3

providing a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9;

providing a ligand for the heptahelix receptor;

incubating the receptor and the ligand with a test sample suspected of containing the antagonist or agonist; and

detecting binding between the receptor and the ligand, antagonist, or agonist,

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wherein binding of the ligand, antagonist, or agonist with the receptor indicates the presence or absence of an antagonist or agonist in the sample.

51. (New) The method of claim 50, wherein the ligand is leukotriene B4.

52. (New) The method of claim 51, wherein the sample contains an antagonist of leukotriene B4, which reduces binding of leukotriene B4 to the receptor.

53. (New) The method of claim 50, wherein the heptahelix receptor is expressed on a cellular membrane of a host cell transfected or transduced with DNA encoding the receptor.

54. (New) The method of claim 50, wherein detecting is accomplished by measuring intracellular calcium levels in the host cell.

REMARKS

By this Amendment, claims 40, 41, 46, and 47 are cancelled, claims 45 and 48 are amended, and new claims 50-54 are added. Claim 45 is amended, and new claim 50 is added, to separate the claimed assays for ligands and antagonists and agonists of those ligands into two claims, rather than claiming both assays in a single claim (claim 45). Claim 45 is also amended to recite a result that relates back to the preamble. Claims 46 and 47 are cancelled in view of the amended claim language of claim 45. Claim 48 is amended solely to correct a typographical error. New claims 51-54 are added to maintain subject matter originally claimed in claims 46-49,

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D8

1 ~~16~~. (Amended) An isolated or purified heptahelix receptor having an amino acid sequence comprising the sequence of SEQ ID NO:2.

Please add new claims 38-49 as follows:

-- 2 ~~38~~. (New) An isolated or purified heptahelix receptor encoded by a nucleic acid sequence present in plasmid clone Lyme21-9.

3 ~~39~~. (New) The heptahelix receptor of claim 2 ~~38~~, wherein the receptor is encoded by a sequence present in SEQ ID NO:1.

D9

40. (New) An isolated or purified leukotriene B4 receptor encoded by a nucleic acid sequence present in plasmid clone Lyme21-9.

41. (New) The receptor of claim 40, wherein the receptor is encoded by a nucleic acid sequence present in SEQ ID NO:1.

4 ~~42~~. (New) The receptor of claim 1 ~~16~~, wherein the receptor has an amino acid sequence consisting of the sequence of SEQ ID NO:2.

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43. (New) The receptor of claim 16, wherein the receptor is encoded by a nucleic acid sequence present in SEQ ID NO:1.

44. (New) The receptor of claim 16, wherein the receptor is a recombinant receptor.

45. (New) A method for assaying a ligand or an antagonist or agonist for said ligand, said method comprising:

providing a heptahelix receptor encoded by a nucleotide sequence present in plasmid clone Lyme21-9;

incubating the receptor with a test sample suspected of containing the ligand, antagonist, or agonist; and

detecting binding between the receptor and the ligand, antagonist, or agonist.

46. (New) The method of claim 45, wherein the ligand is leukotriene B4.

47. (New) The method of claim 46, wherein the sample contains an antagonist of leukotriene B4, which reduces binding of leukotriene B4 to the receptor.

48. (New) The method of claim 45, wherein the heptahelix receptor is expressed on an cellular membrane of a host cell transfected or transduced with DNA encoding the receptor.

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